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IMPROVING THE AIDS TO NAVIGATION.

During the present season the interest of the Light-House Board has been awakened regarding the aids to commerce under their control in the lake districts. On the invitation of Commander Folger, inspector of the eleventh district, Capt. Schley, chairman of the board, made a personal tour of the inspection as far as Duluth upon the light-house tender Marigold.

Earlier in the season, in response to an invitation from the Lake Carriers' Association, Commander Wild, secretary of the board, made a trip from Buffalo to Duluth upon one of the large cargo boats. These trips were valuable in opening the eyes of the Light-House Board to the magnitude of the interests demanding their attention on the inland seas. The result has been that almost every one of Commander Folger's recommendations for the benefit of lake navigation, embodied in his annual report filed some time since, will be brought to the attention of Congress and urged by the board for adoption.

One suggestion of Commander Folger's is that a central office be established either at Cleveland or Detroit for the control of the three lake districts. He does not recommend any alteration in the districts themselves, but he urges that a uniform policy of management over the whole extent of the lakes will materially benefit navigation.

Now each district follows its own course. Where the officer in charge is a strict disciplinarian the light-house regulations are more rigidly enforced and the service is more satisfactory. He suggests no change in the present arrangement except the superimposing of this central office under an officer of high rank, to secure uniformity of policy over the whole expanse of the lakes.

Another matter favorably considered by the board is the establishment of a secondary supply depot at the "Soo" or at the Hay Lake channel. Detroit is too far trom the Lake Superior lights. There has been a large increase in their number during the past season, and more of them will be established next season. The contract system of supplying these more remote establishments is unsatisfactory and will be discontinued. Apparatus for the manufacture of gas for the gas buoys will be set up at the "Soo" depot.

The number of vessels in the light-house service in the eleventh district will be increased next season. The Marigold will be fitted out with tanks this winter to carry gas to the gas buoys, and another vessel will be assigned to duty under the direction of the inspector.

The light-house engineer will also have two vessels next season—the Warrington, which has been rebuilt and refitted this summer, and the Amaranth, which has been in service all the year. He will need both vessels to do the work laid out for the construction department in Inspector Folger's report.

That report further asks that a large number of lights be raised in rank, some third order lights made second order, and so on down the scale. It also asks for many gas buoys and a few new light-houses, the Apostles islands being especially designated for a great number of improvements. Better surveys and charts are asked for. The last lake survey was taken 25 years ago. From change of levels, harbor improvement work and other causes, a new survey has become of great importance, and it is recommended that a new and complete survey be made.

NEW COASTING STEAMERS.

The New York and Cuba Mail Steamship Company has arranged to build two large new steamships to run between New York and Cuba. The designs and plans for the new vessels have been prepared, and the contracts, it is expected, will be signed in a few days. The work of construction will be pushed forward as quickly as practicable. The new vessels are to be modeled on the lines of the St. Paul and St. Louis, and, it is said, will have passenger accommodations equal to the trans-Atlantic steamships.

The building of the new steamships is a compulsory compliance with the terms of the company's contract with the Government for carrying the mails between New York and the West Indies and Mexican ports. The new steamships are to be known as second-class ships, which under the requirement of the Act of Congress governing their construction, must be able to maintain a rate of speed in excess of sixteen knots an hour. By the terms of the contract for carrying the mails the company is compelled to construct the steamships with particular regard to their adaptability for prompt and economical conversion into auxiliary naval cruisers, and according to the plans of the Secretary of the Navy must be of sufficient strength and capacity to carry and sustain the working of a battery of 12 rifle cannon of a calibre not less than six inches. The cost of the new vessels, it is estimated, will be about $1,250,000. They will each be of between 5,000 and 6,000 tons burden, 395 feet in length and 50 feet beam, with a draft of 20 feet. They are to be built on the Delaware, either at Cramp's or Roach's ship yards.

SHIP CANAL FOR FLORIDA.

The articles of incorporation of a ship canal to pierce the Florida peninsula have been filed in New York State, the capital being $75,000,000. The assent of the Tallahassee legislature has been secured and there seems some possibility of the canal being built, still a $75,000,000-canal for Florida would be an ambitious enterprise, in view of the fact that the Erie canal only cost about $51,000,000, and the Suez canal $101,000,000. The projectors say that the canal would be of the greatest importance to the commercial interests of this country. The width of the waterway will be 200 feet through its entire length, and it is thought that it will take five years to complete the canal.

ATLANTIC LINERS.

For purposes of comparison we give some figures of the sizes of several large Atlantic liners, as follows:

	Length. (b. p.)	Breadth.		Tonnage.	Indicated horse-power.
	ft.	ft.	in.		
Kaiser Wilhelm der Grosse	625	66	0	13,800	28,000
Campania and Lucania	600	65	0	12,500	28,000
St. Paul and St. Louis	535	63	0	11,600	20,000
Paris and New York	527.6	63	0	10,499	20,000
Fuerst Bismarck....	502.6	57	3	9,000	17,000
Majestic and Teutonic	565	57	6	9,686	19,500

A NEW CHART.

The Hydrographic Office announces the publication of a chart, No. 1617, of the Bass Islands, and vicinity, Lake Erie, from a survey in 1896 by the officers of the U. S. S. "Michigan," with additions from the U. S. Survey of the Northern and Northwestern Lakes in 1877 and 1878. The chart is drawn on a scale of about one and one-quarter inches to the statute mile, and shows clearly the dangers in the South Passage. Foul ground to the northward of North Bass Island is shown, as also numerous fishing stakes, all about the islands and mainland, as they existed in 1896. The channel leading into Sandusky bay, with range lights, is clearly shown. The chart may be had from the MARINE RECORD office or at any of the sales agents of the Hydrographic Office.

FRENCH-CANADIAN LINE.

A deputation from the Chambre de Commerce Francais, supported by representatives of the Chambre de Commerce de District de Montreal, have called upon Sir Wilfred Laurier and his colleagues for the purpose of bringing to their attention the question of a subsidy for a direct line of steamers between Canada and France.

The project originated with the Chamber de Commerce Francais, which is seeking the co-operation of the mercantile community, but the Montreal Board of Trade, at the council meeting on Wednesday of last week, arrived at the conclusion that the time was inopportune for seeking such action upon the part of the Dominion Government. There was a direct line of steamships between France and Canada some years ago, known as the Bossiere Line, but it was a failure chiefly owing to the inability to secure return cargoes from Canada.

The memorial of the Chambre de Commerce Francais to Sir Wilfred Laurier lays stress upon the fact that the trade between Canada and France during the past twenty-three years, from 1873 to 1896, amounted to $70,237,142, of which the imports were $49,920,061, which paid duties of $17,962,-691, or about 35 per cent., whilst the imports from Germany have paid an average of only 22.5 per cent. The memorial complains that the trade returns do not give the total trade with France because a large proportion thereof comes via English ports and are entered as English goods. The Chambre de Commerce Francaise has investigated the matter, and has come to the conclusion that the imports from France into Canada reach 7 or 8 million dollars yearly. The export trade, too, it complains, is not properly represented, much of it going via England or the United States. The memorial contends that with a direct line of steamships trade between Canada and France would be largely developed and a much needed outlet given to Canadian commerce.

FAST YACHT CHANGES HANDS.

The yacht Britannia, just sold to a purchaser whose name is not given out, is only four years old, but in her many races and victories she has been quite as much admired as any yacht that can be recalled. Both in English and French waters she has met the best of her class, and it would not be an easy matter to count her winning flags.

American yachtsmen well remember the series of matches that the Vigilant, the year following her successful defence of the America's cup, had with the famous craft, and the interest they excited throughout the world. The Britannia has always been well handled, and even in this day, although fast and superior vessels of recent construction have demonstrated that the time will always come when the best may be outbuilt, she has proven a dangerous rival to meet.

There has been the hope expressed that the late owner of the Britannia would again build, and now that she has been sold, there are reasons to believe that this may prove to be the case. Then the series of matches between the large cutters that have made English yachting a matter of such surprise in the years gone by, may be repeated.

The Prince of Wales is an ardent admirer of the great sport, and it is not likely that with the sale of the Britannia his name will disappear from the active list. A new, larger and improved Britannia would please the entire yachting world.

VESSELS CLASSED.

The American Shipmasters' Association, New York, have this week classed or rated in the "Record of American and Foreign Shipping," the following vessels: Three masted schooners, Carrie A. Norton, Edward P. Avery and American; also the screw steamers Danville and Saratoga.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to The Marine Record.

The following steamers have arrived here recently with wheat from Duluth: E. C. Pope, A. P. Wright, La Salle, Bermuda and Uganda.

At the shipyard here the steamer J. W. Westcott is in dock for repairs to her fore foot and some new bottom plank; the steamer M. F. Butters for bottom searching and calking; the steamer Kalkaska was in and had her wheel fastened.

At the Independent Tug Line's floating dry-dock the tug D. P. Hall was in for some repairs.

The life-saving station at this port has been supplied with a fine new lifeboat, which Captain Fountain brought here from Grand Haven last week. The new lifeboat's dimensions are: 34 feet long, 8 feet beam, 3 feet draft. She has a standing keel and also an iron centerboard. She has two masts and carries sails. Captain Fountain and his life-saving crew took advantage of the heavy gale and sea on Monday and took her out for a trial trip, which gave them an excellent opportunity to test her sailing, self-bailing and self-righting qualities. They were much pleased with her behavior and consider her perfect in every way.

The Warde Transportation Co. have chartered the steel steamer E. M. Peck for the remainder of this season and all of next season. The Peck will be operated by them with their present fleet in carrying iron ore between Escanaba and South Chicago.

Grain freights this week are demoralized, shippers are making very few offers, 1¼ cents and less being the rates quoted.

J. A. Calbick and Co. chartered the steamer City of Glasgow for oats to Buffalo at 1¼ cents, steamer J. H. Prentice and consort Halsted corn to Black Rock at 2 cents, steamer Normandie, Salt to Duluth at 10 cents per barrel, lumber Duluth to Chicago at $2.12½.

J. J. Rardon & Co. chartered the steamer Yukon for wheat to Fairport at 1⅞ cents, steamer City of London, wheat to Erie 1⅞ cents, steamer Progress corn to Owen Sound at 1⅝ cents, steamer Sacramento for oats to Buffalo at 1⅜ cents, steamer Caledonia and consort Northwest, corn to Midland at 1⅜ cents, steamer Yuma, wheat to Buffalo at 1¾ cents, steamer Aurora and consort Aurania, corn to Buffalo at 1½ cents, steamer Saginaw Valley, rye to Fairport at 1¾ cents, steamer Orion corn to Prescott at 3½ cents, steamer Phœnix corn to Owen Sound at 1⅜ cents.

Capt. John Prindiville chartered the steamer Norwalk for corn to Midland at 1½ cents.

H. W. Cook & Co. chartered the steamer New Orleans for corn to Port Huron at 1¼ cents, the steamer John Otis for lumber Menominee to Chicago at $1.12½, steamer Westover and barges Bliss and Parana for lumber Manistique to Chicago at $1.25.

MANITOWOC.

Special Correspondence to The Marine Record:

At Burger & Burger's shipyard the tug Waubun was in dock and received some calking, and a new shaft and wheel from the Sheriff's Manufacturing Co., Milwaukee. The tug Stewart Edwards was in for bottom calking. The tug Hill for repairs to stern bearing and wheel. Messrs. Burger expect to get very busy as soon as navigation closes. They will have the Goodrich Transportation Co.'s steamer City of Ludington in dock for lengthening at the end of this month.

Capt. H. C. Albrecht and wife celebrated their golden wedding recently, they were married at Buffalo on Oct. 12th 1847, and they moved to Manitowoc in 1850 and have resided there ever since. Capt. Albrecht was born at Randes Jutland, Denmark, in 1825 and went to sea when he was 10 years of age, a year later he shipped as cabin boy, at Hamburg, on board the barque Brighton, of Boston, U. S., bound to Bangor, Wales, to load slate for Boston. He then sailed on the Brighton to New Orleans with fresh codfish and ice. In 1838 he left New Orleans on the steamer Andrew Jackson, and heaved the lead on her on the trip to Cincinnati, he then went to Beaver on a stern wheel steamer and to Cleveland on a packet boat on the canal. His first job on the lakes was as wheelsman on the steamer Consolation, between Cleveland and Buffalo, which job he held all the season and was a mate on her the next two seasons. He was a well-known master of vessels on the lakes for many years and retired two seasons ago. He is part owner of the steamer T. S. Christie, which was the last vessel he commanded.

Manitowoc has received a big boom during the past year. A large and a small elevator have been built, also large warehouses, two new coal docks and two ships for the accommodation of the F. & P. M. and other car ferries. The Goodrich Transportation Co. have also recently built a machine shop in which to make repairs on the machinery of their steamers.

BUFFALO.

Special Correspondence to The Marine Record.

The wet grain in the ruins of the burned Sturges elevator was sold this week to T. & G. Spaven and Lenahan for $10,250. The sale was made under especially bad conditions, for it not only rained, but everything about the premises was as wet as possible, and the bidders were obliged to stand in the mud and water in order to take part in the proceedings. While the underwriters are not dissatisfied with the amount obtained, one of them said soon after the sale that had the weather been favorable the grain would have brought $15,000. It will now have to be determined how much the government must have for duty on the bonded grain, after which the remaining proceeds will be divided. It is not supposed that the full duty will be exacted, especially as the identity of the grain can no longer be discovered, and it would hardly seem proper to charge more duty on an article than it will bring in an open market. As there were 246,785 bushels of grain in the Sturges before the fire, the amount obtained for it seems small, though nearly half of it was oats, worth about 23 cents a bushel dry, and a great part of the grain is at the bottom of Buffalo river, while all is supposed to be either wet or burned, or both, as well as mixed with the remains of the building. Still a fraction more than 4 cents a bushel is a shrinkage. It is now found that the fire released some of the automatic sprinklers in the eastern elevator adjoining, and that about 16,000 bushels of wheat to the account of D. E. Newhall is wet. B. F. Bruce and S. S. Brown were appointed appraisers of this damaged grain.

Canal men obtained 3¾ cents on some of their wheat to New York on Saturday, and were holding off for 4 cents on Monday.

The shipments of coal from Buffalo for October, 1897, shows a total of 409,313 tons, compared with 374,577 tons for the same time in 1896. Cement, 139,146 barrels, compared with 90,076 barrels for October, 1896. Salt, 94,279 barrels, compared with 66,133 barrels, and 104,185 barrels of sugar, compared with 144,936 barrels for the same time in 1896.

The following shows the receipts by lake during the month of October in the years named:

YEAR.	FLOUR, bbls.	ALL GRAIN, bu.	FLOUR AND GRAIN, bu.
1897	1,922,180	28,247,569	37,868,469
1896	1,639,462	28,263,210	36,640,789
1895	1,535,634	19,938,800	27,616,973
1894	1,812,606	14,897,011	23,960,041
1893	1,548,124	24,091,053	31,832,273
1892	1,350,736	19,670,475	26,086,456
1991	7,147,705	19,317,148	24,768,746
1890	1,129,211	12,580,482	17,939,484
1889	822,170	14,050,730	18,181,580
1888	885,824	9,681,535	14,110,455
1887	453,644	11,345,893	13,614,053
1886	444,966	10,330,061	12,564,891
1885	412,908	6,498,313	8,562,853
1884	271,635	10,719,800	12,077,925
1883	240,471	10,427,010	11,629,365
1882	281,947	7,192,546	8,595,786
1881	111,327	5,230,523	5,705,158
1880	170,614	15,184,616	15,937,686
1879	161,024	15,000,260	15,806,389
1878	154,593	13,880,844	14,653,809
1877	108,693	14,328,917	14,872,102
1876	123,469	7,234,167	7,851,512
1875	170,149	8,605,990	8,916,720
1874	188,091	7,923,460	8,873,940
1873	168,626	12,870,131	13,713,260

The following shows the receipts of flour and grain from the opening of the season to November 1st., in the years named:

YEAR.	FLOUR, bbls.	ALL GRAIN, bu.	FLOUR AND GRAIN, bu.
1897	9,434,567	156,174,509	203,347,344
1896	7,531,274	128,899,210	169,359,753
1895	6,443,037	83,156,500	115,371,685
1894	8,645,606	82,045,208	125,273,238
1893	8,064,985	116,601,030	156,925,955
1892	7,742,643	110,637,475	147,415,028
1891	5,755,803	99,103,767	126,444,196
1890	5,498,432	75,584,238	101,634,158
1889	3,830,140	75,908,410	95,131,140
1888	4,175,470	64,465,662	85,343,457
1887	3,098,998	72,191,136	87,653,123
1886	3,555,212	63,591,838	81,368,198
1885	2,026,505	43,581,630	53,714,150
1884	1,533,521	47,205,196	54,873,106
1883	1,346,370	58,196,574	65,426,959
1882	1,188,338	43,379,092	49,318,357
1881	669,239	50,052,802	53,397,968
1880	893,423	94,167,863	98,534,078
1879	753,895	64,307,579	77,077,054
1878	746,284	69,271,151	73,002,570
1877	513,743	51,949,702	54,513,460
1876	637,820	38,628,153	41,817,250
1875	854,542	43,929,807	48,817,250
1874	1,139,709	50,136,221	55,835,310
1873	954,789	57,930,366	62,704,310

The aliens employed by Capt. Nichols, of the steamer W. D. Morley, were discharged this week upon the advice of Inspector DeBarry, who told the captain that the charge against him for illegally employing aliens upon the boat would be dropped if he complied with his instructions.

Coal shipments, although less than last week, ran up to 100,825 tons, the bulk of which went to Lake Michigan at 40 cents per ton. The Toledo rate was firm this week at 25 cents.

The gale of Tuesday caused the lake level to drop four feet below the normal stage, and everything grounded. The Sauber at the mouth of the piers and the J. J. McWilliams, just inside, also felt the bottom.

Mr. James Ash met with a serious accident this week, which will possibly confine him to his bed for several weeks. He left his office at Forest avenue and Niagara street to start for home. A car was just leaving the corner. Mr. Ash signaled to the conductor to stop and made a few quick steps to reach the platform, when he slipped and fell heavily to the pavement. He was picked up in a fainting condition and taken to his home, where the physicians who were called to attend him found that he had broken several ribs by the fall. It is supposed that his fall was caused by his foot slipping on the wet pavement.

The excavation of a channel across the rock reef in Niagara river beginning about 2,000 feet below Edgewater, has been completed for a width of 80 to 100 feet. The dredged channel is 1,000 feet long and 14 to 16 feet deep in the center and 12 feet deep at the sides. Two temporary buoys mark the sides of the channel at its upper end, and two similar buoys mark the lower end; the channel lying between the buoys. The channel lies about 800 feet off the Grand Island shore. Vessels drawing more than 6 feet are cautioned not to cross over the berme formed in dredging on the north side of the channel.

The local steamboat inspectors have suspended Capt. McCrea of the excursion steamer Gazelle, and Capt. Moore of the steamyacht Glance for one year for the part they took in sinking the steamyacht Glance Sept. 28, and the drowning of engineer Dilliot. The charge was that both were going too fast for a narrow passage.

Capt. Todd of the Oceanica is sick, and Capt. J. A. Whiteside, mate of the Wilbur, has been sworn in as his substitute.

The underwriters have a month more in which to suffer loss. November is often the most dangerous month in the year. Usually its storms are of the worst kind and are made all the more effective in causing loss by the assistance of snow, storms, ice and fog. But there has been cases in which November has passed without causing heavy loss. remains to be seen what is in store for the fleet this year.

It is reasonably certain that some of the old-timers will pass out, but the great loss to the insurance men is not caused by disasters of that kind. They have little concern about the old-timers, for they have been so discriminated against and their values have so shrunken under the pressure of the test put upon them by the insurance men that their passing out will be of little moment.

The steamer J. E. Hall and consort J. R. Noyes, bring hardwood lumber from Manistee to Buffalo and Tonawanda at $2.50 per 1,000.

DETROIT.

Special Correspondence to The Marine Record.

The schooner John Kelderhouse, bound down, tied up at Hurley's dock this week, and by some unknown means broke away from the wharf and started to sail down stream. She made a direct line for the Fessenden, laying at anchor in the river. There was much shouting and hustling for awhile and finally the Kelderhouse let go an anchor just in time to save a collision. Had the Kelderhouse gone 200 feet further, with the strong wind blowing, she would have gained speed enough to have done damage and probably been cut open on the sharp bow of the Fessenden. The tug Erie towed her back to the wharf.

Governor Pingree received a telegram from Theodore Roosevelt, Assistant Secretary of the Navy, in reply to his telegram sent on Saturday to the effect that the state will not accept the Yantic unless she is repaired and unless the government assumes the responsibility for damages to the Canadian steamer caused by the collision with the Yantic Friday. Roosevelt wires: "The Yantic is practically uninjured. If not receipted for at once she will go to Boston. Others want her. The navy department has already spent more money on her than it ought to have done. The governor referred the telegram to Commander Wilkes, of the Naval Reserve, and that officer said the Yantic will be receipted for and come to Detroit at once. The governor later ordered the boat to be receipted for.

Messrs. McIntosh, Huntington & Co., of Cleveland, have five pairs of hulls building at the Detroit Boat Works, for bicycle boats. Two sets were made for them last spring. The hulls will be delivered early next week. These are curious-shaped structures, are triangular boxes, pointed at both ends, with two surfaces flat and the third showing the curves of a double-ended skiff. In the paint shop of the works eight of these boxes, side by side, suggest a huge wooden cigar cut in quarters, or that the works are turning out boat models on a large scale for hanging on office walls. The machinery is added to these vessels in Cleveland. H. H. Taylor, vice-president of the Detroit Screw Works, has recently purchased a very handsome large model gasoline launch of the Detroit Boat Works. Jacob Beller's little steamer Daisy, whose upper works were burned off last spring, is now at the works for repairs. She will be restored no her former lines at a cost of about $800t.

It is said that J. R. Goodchild & Sons, of Malden, who obtained the contract for removing the wreck of the steamer Cottrell from the mouth of the Detroit river, did the work in four days and will make $5,000 profit.

At the sale of the steamer Flora, belonging to Capt. Brown, of Detroit, at Port Stanley, Thursday, Capt. George Shanks, of Windsor, purchased her for $2,700, subject to the approval of the court. Claims against the boat aggregate $7,000. The wages-claims have already been allowed. The others will be adjusted at the November term, at Sandwich.

Charters this week were the George Farwell, Monguagon, A. J. Rogers, Arthur, wheat to Buffalo, at 1½ cents; John Kelderhouse, rye to Buffalo, at 1½ cents; Dobbie, wheat to Cape Vincent, at 3½ cents; Andrews, rye to Fairport, at 1¼ cents.

Mr. N. B. Conger, local forecast official and marine agent for the Great Lakes, has issued a report on the marine disasters between September 16 and October 15, of this year, due

to fog and heavy weather. The schooners Henry A. Kent and Antelope foundered in Lake Superior, loss, $24,500 and $13,500 respectively. The schooners Ellen Stevenson and Kaie Winslow foundered in Lake Michigan; estimated loss on the latter vessel, $15.000. The steamer E. B. Hale foundered in Saginaw Bay, loss, $55,000. There were numerous groundings.

CLEVELAND.

Special Correspondence to The Marine Record:

The Grecian, at Amhertsburg, received some bottom damage this week, and after receiving temporary repairs at Detroit, went on to Portage, her destination.

The Cleveland City Forge and Iron Company is progressing with the work of boring Dr. Gatling's eight-inch gun, the steel casting for which was recently turned out by the Otis Steel Cofnpany. The first boring, 4¼ inches in diameter, has disclosed no flaws. It will require a second boring to attain the full diameter, probably consuming two months' time until the gun is completed, when Dr. Gatling's theory of casting large steel guns will be tested.

After being out of town several days inspecting vessels and making damage surveys, Mr. Robert Logan is again back at his office and as busy as possible on marine business.

The situation as regards down freights is worrying coal shippers. They are all after vessels very hard, and if it were not for their agreement on rates, advances would be paid. Vesselmen are trying to force an advance to the head of the lakes, and are likely to succeed in marking the rate up a notch or two.

Work is progressing favorably at the Lorain shipyards of the Cleveland Ship Building Co. and building has already commenced. The large new dry-dock is also well along but heavy rains of the week has somewhat delayed work.

The boats of the Bessemer fleet will go into winter quarters at Lorain.

The new Bessemer steamer which will be built at Wheeler's Bay City yard will have four Scotch type boilers.

Big vessels like the Polynesia and Constitution were loaded with soft coal at this port during the past week in less than 24 hours in each case; nearly 5,700 tons were dumped into the Polynesia in less than 20 hours at the dock of the Pittsburg & Chicago Gas Coal Co.

L. P. & J. A. Smith will probably build a large new steel tug this winter to fit an engine of unusual size already purchased of the Cramps. The new tug will have as much power as the average wooden steambarge.

Already some of the smaller and low-classed vessels are beginning to seek winter quarters. Insurance rates are so high that wooden tonnage, especially if a trifle old, are better off tied up to a whart than sailing.

Mr. John F. Pankhurst, general manager of the Globe Iron Works Co., left town this week for Lakewood, N. J., and this is an indication that his health is improving.

It has been stated that the Globe Iron Works Co. would launch the revenue cutters, now under construction, on the 13th and 20th of this month. Mr. Newman, assistant general manager of the Works says that no date has yetbeen fixed for these launches.

Capt. David O. Bordeaux, in charge of the steamer John V. Moran, of the Union Transit Line, Buffalo, visited port again this week. I learned that this is the thirty-third year that Capt. Bordeaux has held a master's license and he is as hale and hearty yet as the best of them. Capt. Huff is chief officer of the Moran.

The steamer Andaste went out of the Ship Owner's' dry-dock to-day after receiving two new bottom plates and a thorough survey.

The Cleveland Dry-Dock Co. docked the Cadillac this week for two new bottom plates; the steamer Carpenter for calking and a general overhauling; steamer Gladstone for calking, new wheel and rudder post; a tug was also docked for a new shoe.

The ore receipts at Ashtabula in October were 331,151 tons, and the total for the season to November 1 is 2,805,321 tons, as against 2,291,247 tons for the entire season of 1896. The receipts this year will surely exceed 3,000,000 tons, the largest amount of ore ever received at any port in one year. The coal shipments for October were 187,617 tons, only 110,145 tons of which were registered on the custom house books. This is the largest amount of coal ever shipped from Ashtabula port in one month. Aside from the ore and coal trade, 2,086 tons of iron and merchandise were shipped. The season of 1897 will be a record breaker for Ashtabula harbor.

FLOTSAM, JETSAM AND LAGAN.

Capt. George Wittey, for twenty years with the Goodrich Line, and for a long time master of the steamer Chicago, died last week, aged 43 years.

Capt. A. D. Campbell, of the steamer Roanoke, was knocked down and robbed of $280 and his gold watch and chain valued at $125, at Manitowoc, last Thursday night, while going to his boat in the harbor.

The steamer Colwell, which was seized last week by U. S. Deputy Marshal Bernatz, of Port Huron, was towed into Belle river, and will remain there pending a suit in the Admiralty Court, her liability being about $3,000.

Coal receipts at Portage and Torch Lake ports are of tremendous volume, and there is now little likelihood of a coal shortage of importance, especially as the Calumet and Hecla always carry a large surplus. This season's coal receipts will fall but little below 300,000 tons.

The tug Shelby, owned by George Breyman & Bros., arrived here on Saturday afternoon, with a scow, from Dunkirk, N. Y. The Breyman Bros. have their dredge No. 3 at work at Dunkirk, improving the harbor. Dredges of other firms are working on the same contract.

The Montreal harbor board will hold an investigation this week into the Yantic-Canadienne collision. The underwriters have not decided to attempt to libel the Yantic, and the Dominion government has accepted the letter of the officials volunteering to appear when called upon by the court.

It is understood that Capt. Alex. McDougall, and Capt. Keith, of Chicago, are working on some kind of a scheme to search for gold in the Klondike region. The nature of it is not known, but it is suspected that they intend to pump the river bottoms for gold, as they are obtaining all the information they can relative to different kinds of pumps.

It is possible that the wooden steamer St. Paul, owned by the estate of Bernard Wild, will be sold to an Alaska man, who wants a good steamer to carry people and supplies from San Francisco, or the sound, to St. Michael's, thence to be shipped by river, 1,500 miles, to the Klondike. The St. Paul would be a good boat for the business, as she is in good condition and has plenty of cargo capacity for that kind of trade.

There was a meeting of the International Yacht Race Union, in New York, on Saturday last. The Interlake Association, of which Commodore S. O. Richardson, of the Toledo Yachting Association is commodore, was represented by Radder, of Cleveland, who is one of the best posted yachtsman in the United States, and an enthusiast in yachting as well as a competent man in handling yachts from a practical standpoint.

Among the treasury officials, and the officers having charge of the enforcement of the navigation laws, there is a general feeling that the laws need to be collated so they can be understood both by the shipmasters and the local inspectors. The ignorance and stupidity in fining boats simply makes work for the secretaries of the treasury who reopen the cases, find there was little or no cause to impose the fines and reduce them after having spent much valuable time.

It is understood that in buying up the steamer Flora, for $2,700, Capt. George Shanks represents the Windsor & Lake Erie Railroad, owned by the Walkers, which has a claim against the boat. Just the amount of this claim is not known, but the total of claims is $7,000, and the railroad was allowed to take possession of the boat subject to approval of the court. The wage claims have already been allowed and the rest will be settled at the November term of the court, at Sandwich.

When Capt. James Davidson, of West Bay City, bought the Grummond wrecking tug Swain, it was given out that he would add to her equipment and make her everything desirable as a wrecker. It is now announced that he has done so. She has additional apparatus throughout, including electric lights, and is to be stationed at Detour the rest of the season. She will be on call in case any of the Davidson fleet gets into trouble, and will go to other wrecks when not working at any of the Davidson fleet of boats.

It is reported that President Colgate Hoyt, of the American Steel Barge Company, of New York, contemplates the construction of a steam yacht that may be brought to and from the lakes and the ocean, via the Erie canal. It was reported last year that Mr. Hoyt would build the yacht, but the announcement now has more of definiteness than before. It is expected that the American Steel Barge Co. will build the yacht as soon as Mr. Hoyt determines further particulars regarding the construction best suited to his wishes.

CLOSING OF NAVIGATION.

Dates of closing of navigation at Sault Ste. Marie, Mich., and Duluth, Minn.

Year.	Sault Ste. Marie, Mich.	Duluth, Minn.	Year.	Sault Ste. Marie, Mich.	Duluth, Minn.	Year.	Sault Ste. Marie, Mich.	Duluth, Minn.
1855....	Nov. 23	Dec. 16	1870..	Dec. 1	Nov. 21	1885..	Dec. 2	Nov. 29
1856....	Nov. 28	Nov. 22	1871..	Nov. 29	Dec. 6	1886..	Dec. 4	Dec. 14
1857....	Nov. 30	Nov. 20	1872..	Nov. 26	Nov. 24	1887..	Dec. 2	Dec. 28
1858 ...	Nov. 20	Nov. 20	1873..	Nov. 28	Dec. 30	1888..	Dec. 4	Dec. 31
1859....	Nov. 28	Nov. 9	1874..	Dec. 2	Dec. 11	1889..	Dec. 4	Dec. 4
1860....	Nov. 26	Dec. 4	1875..	Dec. 2	Dec. 10	1890..	Dec. 3	Dec. 8
1861....	Nov. 14	Dec. 12	1876..	Nov. 26	Dec. 19	1891..	Dec. 8	Dec. 7
1862....	Nov. 17	Dec. 16	1877..	Nov. 30	Dec. 17	1892..	Dec. 6	Dec. 6
1863....	Nov. 24	Dec. 7	1878..	Dec. 3	*	1893..	Dec. 6	Dec. 9
1864....	Dec. 4	Dec. 1	1879..	Dec. 3	Dec. 12	1894..	Dec. 6	Dec. 1
1865....	Dec. 3	Dec. 5	1880..	Nov. 15	Dec. 17	1895..	Dec. 9	Dec. 8
1866....	Dec. 3	Dec. 10	1881..	Dec. 5	Nov. 26	1896..	Dec. 11	Dec. 15
1867....	Dec. 3	Dec. 1	1882..	Dec. 3	Dec. 30			
1868....	Dec. 3	Nov. 21	1883..	Dec. 11	Dec. 24	Aver.	Dec. 1	Dec. 8
1869....	Nov. 29	Nov. 12	1884..	Dec. 10	Dec. 25			

TORPEDO BOAT TRIAL TRIP.

The torpedo boat Winslow had her second preliminary trial trip in the Chesapeake Bay on Saturday. She was run at full speed between Sandy Point and Sharps Island, making the distance in 52m. 40s. Showing a speed of 25 3-10 knots an hour.

The contract speed of the Winslow called for 24½ knots an hour. She is a sister boat to the Rodgers and Foote. When the Winslow returned to port at Baltimore, she displayed a broom at her masthead, signifying that she had broken the world's record for torpedo boats of her class, as the Foote had done before her. The English records are, however, still ahead of us but we will overcome this in the near future.

THE WEST SUPERIOR SHIPYARD OF THE AMERICAN STEEL BARGE CO.

A visit to the shipyard shows a wonderful amount of activity. The prospects in Superior's leading industry have not been so bright in years as they are to-day. The American Steel Barge Co. is at last in a fair way to realize its expectations formulated by Captain McDougall several years since when he said it was the ultimate intention of the company to be able to construct an entire vessel. Last Friday at a meeting of the directors it was decided to build at once a large machine shop in which can be constructed engines and machinery for their own boats as well as for any vessels which may come to the dry-dock for repairs. The building will be of iron and brick. 84x150 feet, two stories high. A large force of men was put at work Wednesday on the foundation and the building contract will soon be let. The building will cost about $12,000.

Between two of the slips is being erected the large crane for which over two hundred piles are being driven to carry its immense weight. This improvement will cost $17,000. The capacity of the crane will be fifteen tons. Among the other improvements being put in are a 10-ton steam hammer, a large punch and shears of fifty-four inches depth of throat, pneumatic tools, rivet and bolt-making machines, etc. The entire improvement costing a very large sum and that on tools alone is estimated at $60,000.

It is the intention of the company to put in a large boiler works next season, and when that is built the plant will be complete in every detail. The second dry-dock will also probably be finished before another year rolls by. These various improvements are in the nature of entirely new industries to Superior, and mean the steady employment of a large additional force of men. It is estimated that when work has commenced on the two new vessels to be built there this winter the yards will give employment to fully eight hundred men.

The J. L. Colby docked last week for calking and had some new rivets put in. Next came the No. 116 to be carefully examined. The new schooner being built for the Minnesota Steamship Co., Cleveland, will be a sister ship to the Constitution, only somewhat larger, her principal dimensions being 390, 376, 46 and 26 feet. The exact dimensions of the steamer which the company will build for their own use has not yet been decided on and she may be larger than was formerly given out, the length at least is almost certain to be increased.

EASTERN FREIGHT REPORT.

Messrs, Funch, Edye & Co. New York, in their weekly freight report of the Eastern seaboard states as follows:

Although not quite so heavy a list of fixtures for grain can be reported as the result of this week's business, the inquiry has continued active, and charters for prompt boats and those affording early November loading have doubtless been restricted by the scarcity of near-by tonnage. Steamers to Cork f. o. are firm at 3s. 9d. @ 3s. 10½d. for November loading, and the rate for December is tending to same figures. Large boats continue obtainable for picked ports at 3s. @ 3s. 1½d., with a proportion of oats at 3d. @ 4½d. under the rate for heavy grain; Hamburg and French ports at 1½d. above these figures. Berth freights are firm, and show a fractional advance in most directions above last week's rates. The inquiry for cotton boats from the Atlantic ports continues fairly active, but owner's views are in excess of what charterers can pay on basis of actual berth freights for parcel lots. Charters from the Gulf ports have met with some decline, owing to similar drop in berth freights at these markets. Case oil business by steamer is moderately active, and the improved outlook for freights from the East Indies is shown by the concessions granted by owners in charter for Bombay. We have no improvement to note in the inquiry for timber bottoms from the Gulf ports.

The supply of sail tonnage is steadily decreasing; hence, in face of limited demand, rates continue developing strength. The best inquiry prevailing is for case oil, rates for which article show an advance, both for spot ships and vessels to arrive, which latter tonnage—has been taken at full rates as far ahead as Juue @ July loading—a most encouraging seature. For other trades the want of suitable tonnage has proved an unsurmountable impediment, but rates in all directions continue firm, with rather an advancing tendency.

A shark named "Long Tom" once drew rations at Port Royal, in Jamaica. As the story went there had been many desertions from the man-o'-war in harbor, the men dropping quietly into the water, and easily swimming ashore, under cover of darkness. But when by the regular issue of "rations," Long Tom had been induced to keep cruising about in the immediate vicinity of the ships, the sailors preferred to bear the evils that they had, rather than "fly to others that they knew not of."

EPOCHS IN THE EVOLUTION OF THE STEAMSHIP.

(By John S. Greir, in Modern Machinery.)

The Kaiser Wilhelm der Grosse, of the North German Lloyd Line, is one of the fastest and largest passenger steamers afloat, and has attracted a great deal of attention. The Pennsylvania, of the Hamburg-American Line, has 3,400 tons more displacement, but is only a 14-knot steamship. The Kaiser Wilhelm der Grosse, on her maiden trip this September, made two remarkable passages across the Atlantic. Her engines, of over 28,000 horse-power, drove her huge hull more than an eighth of a mile (648 feet) in length, weighing over 20,000 tons, 564 knots in a single day on this passage across the Atlantic to New York. Her average speed on this great day's run, making an allowance for the actual length of that day, was 22.75 knots. She has 68 steam engines with 124 steam cylinders. She has two bronze screws over 22 feet in diameter, weighing 26 tons each, revolving 77 times in a minute. Each screw is driven by a four-cylinder triple-expansion engine. There are 200 men in the engine department, and it is said she burned 500 tons of coal per day. Her bunkers will store nearly 5,000 tons of coal.

In this magnificent marine contest for mercantile supremacy on the sea, the leading nations of the world are all making rapid progress. The shipbuilders of the United States are making decided headway, although under great national neglect, yet we have produced, not the largest, but some of the finest specimens of merchant and naval steamers afloat.

In this connection some special comments on the evolution of the modern steamship may be appreciated. Let us briefly trace the history of the practical application of steam as a motive force and draw a comparison between the past and the present. Please recall the fact, that it was 1769 that Watt secured his first patent on his inventions utilizing the motive force of steam. He was simply treading in the footsteps of many ingenious men who had preceded him in this effort for centuries. However, he made many very useful and ingenious discoveries and by indomitable perseverence did much that should always make him rank very high as a benefactor of the human race. He gave the steam engine the first, fair practical beginning on a paying basis. It was only by slow progress that the use of steam grew in importance and secured universal recognition. Fulton made his first trip in a steamboat up the Hudson river in 1807, and started the first steamer from Pittsburg, heading for New Orleans, in 1811. The first steamboat plowed the waters of Lake Michigan in 1827, but it was not until 1831 that the first one reached Chicago. The Savannah, built in New York, was the first steamer to make a passage across the Atlantic. This was in 1819, and the trip was from Savannah to Liverpool. However, this was not entirely a sea voyage, as she steamed for only 18 of the 26 days. Her fuel was mainly of pine knots. In 1838 the British steamship Sirius made the first trans-Atlantic passage from Queenstown to New York, making the trip in 18 days. Expending all of her coal she came into port burning rosin. She arrived on April 22, and on the next day the British steamer Great Western arrived after a 16 days' passage. Here we have the first trans-Atlantic race between steamers. About this time steam was being utilized to a considerable extent by ourselves as well as other nations, ashore and afloat, but we can use this date as a birth of our trans-Atlantic steam ferry, which has grown to such gigantic proportions.

Nothing has been done by the ingenuity of man that so thoroughly shows, at one glance, the wonderful development of modern science and skill as the building and running of a modern first-class steamship. The steamship and the innumerable appliances used to give her efficiency are not the invention of any one man, nor of one generation of men, but they represent an unparalleled mechanical evolution brought about by the unceasing efforts of many of the most brainy and skillful men of this or any other age. Having the sailing vessel, the growth of many centuries, as a basis, we now have such vessels as the King William the Great, as the last and now perhaps the most remarkable merchant steamer afloat.

No well informed person can contemplate the achievements of mankind in utilizing the force of the winds in propelling our sailing vessels without admiration. To build and handle a first-class sailing vessel requires expert and courageous men for a large proportion of the purely manual work and great intelligence and skill on the part of those who direct and command. The old style of sailing vessels, as well as this class of to-day, are not only very ingenious pieces of mechanism, but are also things of beauty and life. Many of the greatest of our leaders of thought have vied with each other in describing them in the choicest prose and poetry, as they plunge through the angry sea pursuiug their trackless path. Our age has simply added its increment of wisdom to that of the old-time shipbuilders and sailors. We can do far more duty with steam than with sails and do it in less time, but we are indebted to modern machinery which enables us to accomplish these results. The day of the sailing vessel is not over by any means, but a great part of her glory and usefulness has departed.

As the steamship has displaced the sailing ship so the steel-built ship has superseded iron, as the iron has the wooden hull. The screw propeller has supplanted the side wheel; the triple or quadruple expansion engine has displaced the compound engine, as the compound engine took the place of the simple expansion engine. Very high pressure steam and rapid-moving engines have taken the place of low-pressure steam and slow-moving engines.

In 1850, 10 or 15 pounds pressure of steam per square inch was in common use for sea-going steamers, while 180 pounds pressure is not uncommon to-day. We were very proud of the United States steamer Niagara in 1857, as a fast and magnificent addition to our navy, but she carried only 19 pounds steam pressure. When she spun off 11 knots an hour under steam alone she aroused national enthusiasm and the envy of other nations.

Steel commenced to be largely used, instead of iron, in steamship construction about 1868.

The compound engine came into general use about 1870, while the triple-expansion engine commenced to supplant it about ten years later. During the next ten years many fine steamships fitted with costly compound engines had these new and substantial engines and boilers removed and thrown on a scrap heap in order to be fitted with the more efficient triple-expansion engines and improved boilers that could stand a higher pressure of steam.

The growth of the steam propeller for steam navigation is interesting. I remember a little scrap of history given to me in 1861, in a conversation with that heroic and venerable naval officer, Commodore Charles Stewart, who said that while at Malta in 1804, he saw a sailing vessel propelled out of that harbor by means of a screw in her stern driven by her crew. But it was not until 1839 that the first screw steamer crossed the Atlantic. She was the Robert F. Stockton, a vessel only 70 feet in length. After a trial in England showing her capacity as a steam towboat she was brought over to New York under sail alone. In 1841, the United States steamer Princeton was built for our navy. Our nation was the first to introduce the screw propeller on a war steamer. The general use of the screw for naval purposes preceded its use for the merchant service at home and abroad. The Cunard Steamship Co. did not use the screw for sea service until 1852, when they built four screw steamers of iron. It was not until 1861, that they put their first screw steamer, the China, on their trans-Atlantic line.

In one sentence we might describe the modern sea steamer by saying she has a steel hull and water-tight compartments; she is propelled by one, two or three screws, driven by triple or quadruple expansion engines of tremendous proportions and great efficiency; she abandons all pretense of being a sailing vessel; she has boilers of extraordinary strength and efficiency in absorbing heat, carrying a steam pressure of 180 or more pounds per square inch, with furnaces which are constructed to consume the fuel with great rapidity and economy. The boilers and engines are the heart of the ship and depend upon the energy stored in the fuel to give vitality and make the ship almost a thing of life. As heat is the motive force giving motion to the winds, so heat is the motive force that we utilize in the modern steamship. Man's ability to utilize and control heat is the open secret of our success.

Perhaps nowhere is coal consumed with more care and with greater economy than under the boilers of a first-class steamship. Coal space saved means more cargo carrying capacity and greater endurance for a long voyage. The coal pile properly utilized is a very important part of the capital on which a steamship company depends for dividends. Forty years ago it was a common thing to consume from four to six pounds of coal per hour to develop a horse-power at sea. The United States steamer Niagara consumed four and three-quarters pounds of coal for an indicated horse-power in 1857. In our day a pound and a quarter or a pound and a half of coal is said to be sufficient. Hence, for developing power in the economy of coal consumption alone we have approximately a four-fold increase during the past 40 years. Thus from this one cause, taking account of the space saved by the coal not necessary to consume, and the efficiency of that which is consumed, we have the capacity of a steamer for carrying cargo increased six or seven fold. The engines and boilers of our time are more reliable than those which they have superseded, and hence less extra coal is required to be carried for emergencies. This increases the cargo-carrying capacity of a ship. Our engines and boilers being relatively so much lighter and occupying so much less space, in order to develop the same amount of power, makes a handsome addition to the carrying capacity of a modern steamship. The use of steel in constructing the hull, and greater experience in putting it together for strength, has vastly reduced its relative weight, and the increased size of the hull tends to reduce the relative power necessary to drive it through the sea. Our models have been greatly improved. Our screw propellers are more efficient in expending the power developed. We depend less on sail power now than we did then, which reduces the weight and resistance of the top hamper, then thought to be so necessary. All of these changes co-operate to give us more cargo-carrying capacity and make a pound of coal more efficient in carrying cargo across the Atlantic. Perhaps I may venture to say that this efficiency, at the old speed of 11 knots, has been increased thirty-fold in the last 40 years.

We should remember that a 5,000-ton steamer was then considered very large, and 11 knots a high speed, hence the cargo-carrying capacity was nearly all sacrificed in carrying the engine, boilers and fuel in order to obtain this speed. The Great Eastern, of 1858, was an exception, as she was larger than the Kaiser Wilhelm der Grosse. This estimate of a thirty-fold increase efficiency of coal in transporting a cargo across the Atlantic is based on the average sized steamer of that time. It would not be wise for a company to build a steamer as large as the Kaiser Wilhelm der Grosse, and fit her with engines and boilers sufficient only for a speed of 11 knots an hour to test this estimate. Theoretically, it is held that when we reduce the speed of a vessel to half speed, which in this case would make her an 11-knot steamer, the weight of the boilers and engines could be reduced to one-eighth of the present size and that we could save three-quarters of the coal necessary to bring her across the Atlantic at 22 knots. This reduction of seven-eighths of the weight of the boilers and machinery and three-quarters of her coal would add very handsomely to her cargo-carrying capacity. Fairly reliable data on this hypothetical estimate exist, but I regret to say that I have not been able to obtain the facts so as to make a precise statement. Steamship companies are generally very reticent as to their coal consumption. They have active and zealous rivals, and this is part of their private affair.

Our age demands speed at sea as well as on land, and while the expenditure of coal is an important item, it is not so important as making dividends for the owner. This great economy in carrying freight is not attained in these steamers that burn from 300 to 500 tons of coal per day and make a speed of 18 to 20 knots per hour. Here there is a wise sacrifice of the cargo-carrying capacity for high speed; a demand that in these cases is imperative in this fast going age. The mails and passengers demand speed, and are able to pay for it. One hundred dollars is a common price for a first-class passenger from New York to Liverpool, while 160 pounds of flour will be carried on the same ship for 25 cents.

We are indebted to new methods and to newly-invented machinery in the production of nearly everything that belongs to a first-class steamer of to-day. She is a floating castle built by means of modern machinery, and filled with it for service afloat. She is not only driven against wind, sea and tide by her engines, but she is steered by steam, lighted by a steam-driven dynamo, ventilated by power developed by steam, she hoists her anchors and her ashes by steam, frees her bilge from leakage, handles her cargo in loading and unloading, warps herself into her dock, manufactures her own ice and distills her own fresh water from the sea.

As much as we have advanced in perfecting our steam machinery and the ship itself, yet we have no reason to suppose that we have reached the limit. There will probably be fully as much advance made in the next forty years as we have seen in the last forty. The articles that you have published in your May and August numbers in regard to the remarkable experiments made by Parsons on his steamer, the Turbinia, in Great Britain, are suggestive of a chance, at least, that he may so perfect his devices as to make a change from the reciprocating steam engine to the rotary

engine. What I have seen and read concerning these experiments does not make me sanguine of practical success in this direction, but should certain well-known difficulties be met, our scrap heaps may be filled with the wrecks of the steam engines of which we are now so proud, and the rotary engine alone may be used to drive the "greyhounds of the sea."

Should any one who was familiar with a steamship of 40 years ago have had a Rip Van Winkle-nap of twice 20 years, and on awakening find himself on a modern first-class steamship, he would be in the best place in the world to study the progress of the age in modern machinery and its products. After carefully studying the new conditions of affairs on the ship, but few things that he would see ashore would astonish him very much. Should our sleeper happen to be an old naval veteran, and awake on a first-class man-of-war, he would see even more to astonish him than on the merchant steamer. Although she may have cost the government several million dollars, all the gold in the world could not have produced anything like her 40 years ago. We regret that there is so much sin in the world, requiring such a large expenditure of money and such a concentration of the evidences of man's progress in material things, as can be seen in the wonderful development of science and mechanical ingenuity presented on this special class of vessels. A first-class modern man-of-war is by far the greatest mechanical wonder of the world. The intelligent observer will see that intense concentrated force controlled by human intelligence is her commanding characteristic.

Universal peace and good will to our fellow men may be in store for us in the near future, but a modern man-of-war is not built and maintained in confirmation of such a theory.

MIGHT WAS RIGHT.

The captain of the steamer Wilhelm mounted guard over his boat at Ogdensburg Saturday last and defied any man to touch the lines holding her to the dock. The trouble was caused by the Ogdensburg liner Langdon attempting to take the Wilhelm's turn at the Ogdensburg transit elevator. Finally, under the protection of a squad of police, the Wilhelm's lines were cast off and the boat drifted into the stream. The Wilhelm and consort arrived with grain from South Chicago. After she had made fast to the dock, the liner Langdon was instructed to go to the elevator ahead of her. After telegraphing his owners, the captain of the Wilhelm got out every line on his boat and refused to move. The Langdon under instructions from Supt. Westbrook of the elevator, tried to force the Wilhelm out with her bow but failed. The captain of the Wilhelm then produced his revolvers and warned the elevator hands that he would shoot the first man that touched his lines. By this time Attorney Spratt had arrived and advised the superintendent to direct his men to throw off the lines under the protection of the police. This was done.

NEW PROPELLING DEVICE.

Mr. Charles Kimball, of Toledo, has invented a new device for propelling a boat. The small craft is fitted with two spiral springs about a foot apart. In these springs is fitted a slide with rods on each side, on which are handles. One man sits in the forward, and the other in the afterpart of the boat, and taking hold of the handles, they pull and shove the rods attached to the slide. The wheels forward are started when the rods and spirals are in motion, and the shaft is started around at a brisk rate, turning a small propeller in the stern. The test of the boat for 1,000 feet made the time in running 2 minutes 34 seconds, and returning the time was 2 minutes 21 seconds. The time made indicates good speed. The boat is too short for a perfect test of the machinery, and more complete tests will be made later. Of course the device is only meant for small boats and to take the place of oars or a sail. The invention has little commercial value but may be used at summer resorts for propelling pleasure boats in lieu of using oars.

THE LARGEST STEAMSHIP COMPANIES OF THE WORLD.

According to the latest edition of the "Repertoire General" of the Bureau Veritas, there existed upon the registers of the various maritime nations at the time of the publication of the work 29,315 sailing vessels measuring 8,894,732 register tons (against 29,348 ships and 9,136,560 tons in the previous edition of the book), as well as 11,271 steamers measuring 17,889,006 register tons (against 11,155 steamers and 17,089,596 tons. These figures show that steam tonnage is still increasing at the expense of sailing tonnage, but that the latter is decreasing in a smaller proportion than was noticeable a few years ago.

The publication of this new volume renders it possible, with the added assistance of Lloyd's Register and other authorities, to complete a list of the most important steamship companies of the world, and to show precisely how they compare with each other. According to the statistics thus available it appears certain that the claim which has been frequently put forth on behalf of the Hamburg-American Packet Company of being the largest shipping company in existence is a just claim, beating, as it does, the largest British company (according to tonnage) (the Peninsular and Oriental Steam Navigation Company) by 3,805 tons gross and 10,154 tons net. The following is the list:

COMPANIES.	No. of Vessels.	Gross Tonnage.	Net Tonnage.
BRITISH.			
P. & O. Steam Navigation Co. (London)	60	283,140	164,836
British India Steam Navigation Co. (London)	97	251,429	162,482
T. Wilson, Sons & Co. (Hull)	82	159,793	103,450
Pacific Steam Navigation Co. (Liverpool)	41	128,336	77,774
Cunard Steamship Co., Limited (Liverpool)	27	119,471	65,011
Ismay, Imrie & Co. (White Star Line) Liverpool	21	114,290	68,264
Union Steamship Co. of New Zealand (London)	52	65,239	39,371
Irrawaddy Flotilla Co., Limited (Glasgow)	42	20,393	12,367
GERMAN.			
Hamburg-American Packet Co. (Hamburg)	69	286,945	174,990
North German Lloyd (Bremen)	67	265,613	152,126
Hamburg S. American S. Nav. Co. (Hamburg)	32	100,646	65,422
Hansa Steamship Co. (Bremen)	37	84,867	54,446
FRENCH.			
Messageries Maritimes Co. (Marseilles)	63	229,837	114,000
Comp. Generale Transatlantique (Paris)	64	166,701	72,113
ITALIAN.			
Navigazione Generale Italiana (Rome)	96	171,041	105,598
AUSTRIAN.			
Austrian Lloyd (Trieste)	72	146,560	87,800
SPANISH.			
Compania Transatlantica (Barcelona)	36	121,161	78,702
DANISH.			
United Steamship Co. (Copenhagen)	109	85,525	50,719
RUSSIAN.			
Russian Steam Nav. and Trading Co. (Odessa)	75	80,659	53,342
TURKISH.			
Idarei Massousieh (Constantinople)	69	57,842	35,664
JAPANESE.			
Nippon Yusen Kabushiki Kwaisha (Tokio)	68	161,698	101,383

The following are seven of the largest steamers afloat:

NAME.	Length. Feet.	Breadth Feet.	Depth. Feet.	Gross Tonnage	Net Tonnage	Displacement. Tons.
Kaiser Wilhelm der Grosse (Ger.)	625	66	43	14,349	5,521	20,500
Lucania (Brit.)	601	65.2	37.8	12,952	4,975	18,000
Campania (Brit.)	601	65.2	37.8	12,950	4,974	18,000
Kaiser Friedrich (Ger.)	600	64	41	12,000	.....	17,000
Pennsylvania (Ger.)	560	62	42	12,261	7,861	23,500
Pretoria (Ger.)	560	62	42	.....	.....	23,500
Augusta-Victoria (Ger.)	520	56	33.8	8,479	3,568	15,260

COAL SHIPMENTS.

The Herald, of Lorain, has the following to say relative to coal shipments:

It is believed the employes of the C. L. & W. railway company engaged on the docks here are making a serious mistake in refusing to work nights and Sundays without extra pay. We are informed the company is paying exactly the rate paid for the same work at other ports and that the company find it very difficult to get vessels to come here with cargoes of ore or to load coal when there is danger of delay on account of the men refusing to work nights and Sundays. As a result of this, during the past ten days no less than $3,000 in wages have been lost to the men. The officers of the company declare their willingness to pay just the same wages and give their men as good facilities for making good pay as exist at other ports. The company has stopped all work on the docks for which the advance was asked and the men appear to be the greater losers.

This trouble works greatly against the interests of the harbor and the town and it is earnestly hoped the matter will be adjusted soon. The shipping season cannot last more than four or five weeks at most and every day should be made the most of. Except in the matter of hauling the ore the company will not lose anything, for every ton of coal that can be mined along the road from now to the close of navigation can easily be shipped from other ports.

The lightkeeper at Monroe, Michigan, reports that the Hubbell dredge, No. 3, is sunk in Lake Erie, about 700 feet east of the lighthouse, in nine feet of water. A light is placed on her at night, and it is expected that she will be raised this week.

CONTRADICTORY EVIDENCE.

As is usual, the libel filed by the Susquehanna and the cross-libel filed by the Ira H. Owen in the suit brought before United States District Judge Ricks, at Cleveland, for collision off Presque Isle, Lake Huron, flatly contradict each other. The Owen and Susquehanna came together in a dense fog, through a misunderstanding. Had it not been that both were large, unusually strong steel boats, with strongly built collision bulkheads, they would have gone to the bottom. As it was, neither could have lived long at sea had a strong wind and swell been on. Thus far the case presents no features of unusual interest.

The libel of the Susquehanna against the Owen alleges that the Susquehanna was bound from Buffalo to Chicago with a miscellaneous cargo; that at 4:10 on the morning of July 20 she was abreast off Presque Isle Point, Lake Huron, in a fog, and running under check; that the fog was very dense and she checked to the slowest possible speed. While thus proceeding she heard the signal of another steamer, apparently ahead and some distance away. The Susquehanna blew one blast and ported her helm. Almost immediately the other blew one blast, apparently right ahead and so close that the master of the Susquehanna immediately ordered her helm amidships and her engine reversed and blew a danger signal of several short, sharp blasts.

The signal she repeated, and the approaching steamer, which proved to be the Owen, blew a danger signal, but disregarding all signals and the circumstances, recklessly came on at great speed and struck the Susquehanna, then backing strong and with her headway stopped, upon her starboard bow nearly end on, crushing in the Susquehanna's bow and injuring her to the extent of $9,000.

The Owen Transportation Co., owners of the steamer Ira H. Owen, filed a cross-libel, alleging that after passing Presque-Isle she steered S. E. by S. ¼ S. until such course was changed by porting, in accordance with a signal from the Susquehanna; that the fog becoming very dense she checked to a very low speed. She continued thus, regularly sounding her fog signal of three whistles until she heard a fog signal from a steamer, which proved to be the Susquehanna. She was then one to two points on the starboard bow of the Owen and a long distance away, but before it could be determined what course the Susquehanna was steering the latter blew a one-blast signal to the Owen, thus informing those in charge of the latter that the Susquehanna was directing her course to starboard and across the Owen's course. The Owen at once answered and ported her wheel so as to pass under the stern of the Susquehanna. The Owen continued with bare steerage-way, swinging broadly under her port wheel, and resumed the blowing of fog signals, but as the vessels approached each other the Susquehanna signaled with an alarm signal, upon which the Owen answered with a like signal and reversed her engine full steam. The Susquehanna came out of the fog at a considerable rate of speed and ran across the bow of the Owen, so that the starboard bow of the Susquehanna struck the stem of the Owen and carried it to the starboard, and then raking across from port to starboard, she further broke in and carried away the entire upper part of the Owen's bow. At the time of collision the Owen was reversing and her headway had been almost stopped. It is alleged that she was injured to the extent of $9,774; that she was employed on a profitable charter, and by reason of the accident was precluded from continuing it for 22 days, which, at the rate of $246.25 per day, deprived her of $5,417 earnings. The aggregate she asks for is $15,191.

THE WHALEBACK IN INDIA.

The old proverb states that "you should not look a gift horse in the mouth;" but a little astonishment is allowable, says the Indian Engineer, at the appearance of the City of Everett, which lately arrived at Calcutta with a cargo of grain sent by sympathizers in America toward the relief of the famine-stricken. This "whaleback" steamer is shaped like an enormous cigar as to hull, and has three masts in the fore part, while the funnel is in the stern. A two-storied deck house rises to a considerable hight amidships. She is stated to be able to carry a maximum amount of cargo with a minimum draught; and is fitted with triple-expansion engine of 265 horse-power nominal and can make 10 knots loaded; but from an artistic point of view she is as ugly as a boat can be made. We hear the appearance of this nautical phenonenon excited a considerable amount of interest among the pilots at the Sandheads when she came into their horizon.

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CLEVELAND, O., NOVEMBER 4, 1897.

INSPECTOR DEBARRY, of the Immigration Bureau, Buffalo, is again interfering with sailors. This week the steamer W. D. Morley, Capt. Nichols, had to discharge some men at the request of Mr. DeBarry, or else stand a prosecution in the courts, and of course the master took the easiest way out of it.

ASSISTANT SECRETARY SPAULDING has authorized the remission of penalties levied upon the schooner Vinland and the steamer Viking of Port Huron, amounting in the former case to $100, and in the latter to $1,600. These penalties were levied upon the frivolous pretext now familiar to lake vessel men, including failure to have the cubic contents of life-boats marked thereon, failure to keep the fire buckets full to the brim, and the especially henious offense of causing the ship's papers to be locked up in a safe place while the captain is on shore. In the cases above referred to it was shown that the rules transgressed were passed subsequent to the last inspection of vessels, and their masters were ignorant of them. Full remissions were made in both cases.

THE Hydrographic Office, Navy Department, Washington, D. C., has issued a chart of the west end of Lake Erie, published from a survey in 1896 by the officers of the U. S. S. Michigan, with additions from the United States survey of the northern and northwestern lakes in 1877 and 1878. The chart is drawn on a scale of about one and one-quarter inches to the statute mile, and shows the dangers in the south passage. Foul ground to the northward of North Bass Island is shown, as also numerous fishing stakes all about the islands and mainland as they existed in 1896. THE RECORD is indebted to Commander J. E. Craig, U. S. N., hydrographer, for a copy of the above named chart numbered 1617. All yachtsmen should have a copy of this excellent delineation of Lake Erie surroundings.

THE Hydrographic Office, U. S. N., has begun an exhaustive investigation of the bottom of the lakes, taking soundings, locating dangerous shoals and reefs, discovering the soil and depth of water at various times of the season. Before long "pilot charts" will be issued monthly. The Weather Bureau issued this week its first "weather chart" of the lakes, giving all possible data about storms to be looked for at this time of year. Among other things they take note of fogs, one of the most formidable dangers to lacrustine navigation. It is gratifying to note that Buffalo is not the foggiest harbor on the lakes. That distinction belongs to Cleveland, which has averaged since 1890 no fewer than 57 foggy or partly foggy days in every 100. Chicago, during the same period, has averaged 36, Buffalo 38, Milwaukee 28 and Erie 6.

HYDROGRAPHIC OFFICES.

One of the leading features in the advancement of the United States mercantile marine is the work now being carried on by the branch Hydrographic Offices, U. S. N. At these offices barometers and thermometers are compared with standards free of cost, and the latest information can always be obtained regarding charts, lights, dangers to navigation, and all matters of interest to mariners. Navigators of every nationality are invited to avail themselves of the benefits of these offices, and to co-operate with the Hydrographic Office at the Navy Department in Washington by sending in prompt and complete reports of marine data upon their arrival in port. At places outside of the United States such communication may be handed to the U. S. consul who will mail them, without cost, to the sender. In reporting a derelict vessel or drifting buoy, special care should be taken to state its position and give as exact a description as possible, in order that it may be identified.

In Chicago the office is located in the Masonic Temple; Cleveland, the Arcade; and although no address is yet given for the Buffalo office, any communication addressed to the officer in charge will no doubt meet with due and careful attention.

LAW ON THE LAKES.

Assistant Secretary of the Treasury Spaulding who has charge of the enforcement of the laws governing the navigation of the lakes, is very much disgusted with the laws, and his opinion that they should be materially modified, is growing stronger. Hardly a day passes but General Spaulding has occasion to remit or reduce to the lowest possible minimum fines that have been imposed upon vesselowners or masters because of the utterly unreasonable laws now in force.

Two Ohio cases of that character have been acted on by General Spaulding, during the present week. One is the case of the Northwestern Elevator and Mill Co., of Toledo, against which a fine of $50 was imposed recently, on the charge that the company failed to surrender its license for the steam canal boat, J. B. Barnest, at the time of its expiration. The secretary of the company wrote the department explaining that the license expired during the summer, when their business was comparatively at a standstill, and so their expiring license was overlooked until business began again after harvest. All the violation of the law was purely technical and not at all intentional. Secretary Spaulding cut the $50-fine down to $3.

The other is a Cleveland case, where C. R. Jones, of that city, managing owner of the schooner John O'Neil, was fined $100 for his failure to produce the schooner's papers when a government inspector called upon him for the same. It transpired that the papers were at that time in the hands of another official at the custom house, where Mr. Jones had been instructed to leave them. As he could not leave them in two places at the same time, he technically violated the law, which requires all the papers of a vessel to be produced at a minute's notice, on demand of any authorized inspector. The law is so clearly unreasonable and impossible of inforcement that Gen. Spaulding promptly remitted the $100 fine in its entirety.

"The laws governing lake traffic," said Gen. Spaulding, in referring to the subject, "were passed many years ago, in the early history of the country, and were really intended for the control of the ocean rather than lake traffic. They have been somewhat amended, but so far as they seek to control lake navigation have long since outgrown their usefulness and are so harsh and unreasonable that they should be materially modified. The penalties provided for slight violations of the law are in most cases unnecessarily severe, and in some cases call for absolute confiscation of the ship, its cargo and all its tackle, etc., in addition to the heavy fine. Such a case recently happened where a Michigan man was fined $250 and his whole outfit confiscated to the government simply because he unexpectedly found he was running seven and one-half miles an hour in the St. Mary's river, when he was allowed to run only seven. I reduced that whole penalty down to $15.

"Many attempts have been made to have the laws amended so as to make them fit the changed conditions of the present generation, and some day Congress will do its duty in the matter, but I fear the change may not come in the life of the present Congress."

LAKE FREIGHTS.

Although the end of the season is approaching rates are not inclined on the upward tendency. Rather the opposite is the situation at the end of this week. The Buffalo coal rate is reported at 50 cents to Lake Michigan, 40 to 45 cents from Cleveland, while the Duluth rate from Buffalo holds at 25 to 30 cents; soft coal 35 cents. The receipts of coal at the head of the lakes for the month of October were 123,885 tons, as compared with 72,895 tons for the same month last year. The principal grain shipments consisted of 1,946,110 bushels of wheat, 5,000 bushels of oats, 156,000 bushels of barley, 75,000 bushels of rye. Flour shipments show an increase, while grain shows a decrease. The flour shipment was 395,165 barrels, as compared with 280,740 barrels for October last year.

In iron ore the freight market is very dull and vessels are seeking down-bound cargoes at even lower than former rates, although there is still a large quantity of ore to come down the lakes before navigation closes, most of which, however, is covered by charters made earlier in the season.

Grain rates out of Chicago are simply demoralized, being down to 1 cent on corn, with not enough to go round even at that figure, and the Duluth-Ft. William rate is still at 2 cents on wheat.

The old rate of 22½ cents for lake and rail has been put in operation at Minneapolis, and all-rail rate is now 7 cents higher than the lake and rail. All-rail rates to the East have been advanced. By way of Chicago an advance of 2½ cents has been made. The cross-lake rates have also been advanced a little.

METEOROLOGICAL CHART OF THE LAKES.

The Weather Bureau has published a meteorological chart of the lakes containing some valuable data for the current month. It is stated that November is one of the most perilous months of the season of navigation. The winds are frequently of midwinter violence and the heavy snow storms that sometimes accompany them make navigation exceedingly difficult. As compared with October, the number of severe storms is greater; northwesterly gales continue for a longer time, and the weather is much more likely to be overcast and threatening.

One hundred and sixty-six storms of greater or less severity (an average of 8 per month) have passed across the lake region during the last 20 years.

Storms that pass eastward to the north of Lake Superior give brisk to high southwesterly winds over the lakes and generally little or no precipitation. These storms are not especially dangerous to navigation. On the other hand, storms which approach from the south or southwest may cause violent gales over the lakes, accompanied by rain turning into sleet and snow.

When the position and probable direction of movement of a storm center are known the successive changes in the direction and strength of the winds at any point on either side of its path may be anticipated..

On the average, eight storms pass directly over the lake region in November. While the majority of them can be safely weathered by the larger craft, the perils of navigation are greater than in October by reason of the general inclemency of the weather in late November storms.

The table of maximum wind velocities shows that the highest winds have occurred at a majority of the stations since 1891. The highest wind velocity ever recorded at Port Huron, Detroit, Toledo, and Cleveland occurred on November 26, 1895. This severe storm was general throughout the lower lake region, yet the number of casualties was comparatively small, a fact which illustrates in a striking manner the changes in the character of lake shipping that have taken place during the last 20 years. In November, 1879, a month of severe storms, none of which, however, were equal in severity to that of November 26, 1895, 61 lives were lost, and a total of 110 vessels went ashore or grounded, probably the greatest number of casualties ever recorded in a single month. These figures might well be taken as the total casualties of an entire season during recent years.

November weather on the whole, is quite variable. The condition known as Indiam summer occasionally prevails, but more often several seasons pass without affording a single day that can properly claim that designation.

Snow storms are frequent on the south shore of Lake Superior, especially to the eastward of Keweenaw Point, and on the St. Mary's river. Following down the western shore of Lake Michigan, from the Straits of Mackinaw, the number of such storms decreases, reaching a minimum at Chicago, where the average is but four per month. The number on the eastern shore of the lake is slightly greater than on the western shore, and this remark also applies to Lake Huron. The region of least snowfall on the latter is in the neighborhood of Port Huron. There is less snow on the southwestern shore line of Lake Erie than elsewhere on

the lake, but the difference is not great. Generally it would appear that upon the lakes whose longer axis run in an easterly and a westerly direction there is about as much snowfall on one side as upon the other. Lake Superior is probably an exception to the rule, since the snowfall at Duluth and Port Arthur is considerably less than eastward of Keweenaw Point.

REPORT ON SHIP CANAL.

THE RECORD has received a copy of the full report of Major Symons, Corps of Engineers, U. S. A., on the cost and utility of ship canals to connect the Great Lakes with the navigable waters of the Hudson river, to be constructed wholly within the United States. While fully recognizing the attractiveness of such an enterprise he very decisively pronounces against it, because that the benefits to be derived would not be commensurate to the cost of construction and maintenance of the works, and, more particularly, because the main object contemplated—reduction of the cost of transportation—can be more effectually accomplished at less than one-fourth of the cost.

Of the different routes contemplated for ship canals, Major Symons pronounces in favor of the route via new canal round Niagara Falls, and through Lake Ontario to Oswego, and thence to New York. He admits that a slight saving in freight might be effected over present cost via the Erie canal under its present capacity, or even under the greater capacity which is designed under the recent appropriation made by the State of New York for its enlargement and improvement. At the present time, boats draw 6 feet of water, and each boat is passed through the locks separately. The cargo for each boat is 240 tons, or 8,200 bushels of wheat. When the contemplated alterations are completed, boats drawing 8 feet of water and carrying 400 tons (or 13,333 bushels of wheat) can be employed, and, with locks lengthened as proposed, two boats will be locked at once, thus giving greatly increased capacity, and a much more rapid passage. Major Symons considers the proposed improvements utterly inadequate, and suggests in lieu thereof, that the Erie canal be so enlarged as to give passage for barges 200 feet long, 30 feet broad, and drawing 10 feet of water; that the locks be reduced in number and arranged to give passage to two boats at one lock, with mechanical lifts to replace flights of locks where advisable; the business to be conducted by fleets consisting of one steam barge and three motorless consorts, running between Buffalo and New York; the barges to be strong enough for running on the Great Lakes.

In making comparisons Major Symons starts with the arrival of a propeller at Buffalo, say drawing 16 feet of water, and carrying 166,667 bushels of wheat, and proceeds to contrast the cost of transportation to New York by same propeller to New York, via the Oswego ship canal, with the cost of same service by steam barge and consorts via Erie canal, if enlarged and improved in the manner in which he suggests. He assumes that the propeller, on arrival in New York, will discharge its cargo there, to be loaded on vessels specially built for ocean trade. On this point, he says: "For the highest economy in transportation, special types of vessels are needed for use on the ocean, on the lakes, and on the canals, and neither can replace the other in its proper waters without suffering loss of efficiency. Ocean vessels could not, as a general rule, engage in the business of passing through a ship canal and the lakes to upper lake ports; and lake vessels are not fitted for use upon the ocean, and if they made use of a canal they would have to transfer their cargoes at the seaboard. For economical transportation through a canal from the Great Lakes to the sea special vessels, differing from, and far less costly, than ocean or lake vessels are required. Major Symons shows that the steam barge and consorts require only one-fourth of the capital for construction; that they can transport during the season a larger quantity of wheat than the 16-feet draft propeller, and that the expenses during the season are nearly 25 per cent. less. His calculations are all based on the assumption that both classes of vessels are kept fully employed; but he says that lay-ups may be expected in dull times, the loss resulting from which will be greater in the case of the propeller than in that of the steam barge and consorts. On arrival at seaboard the cargoes by the latter class will be more conveniently and cheaply unloaded and distributed than by the propeller. All the above statements and conclusions are primarily intended to apply to produce intended for export, but apply with even greater force to products for the eastern domestic market, which is of much greater value and magnitude than the foreign market.

In addition to the relative cheapness of transportation by the steam barge and consort mode of conveyance, Major Symons shows that the expenditure on the alterations of the Erie canal required for this class of boats will not be one-fourth of the amount required for the ship canal.

The arguments and conclusions in this elaborate report of Major Symons are almost exactly in correspondence with those found in a long treatise on the same subject, published in the annual report of the Produce Exchange for 1872, said to have been prepared by the then engineer for New York State. Large lake vessels, with their large crews and large cost as compared with the ordinary canal barges and their crews, could not afford to navigate them (ship canals) even free of tolls, at the rate of 14 miles per day for sailing vessels, and 28 miles per day for steamers. Canal barges carrying 20,000 bushels of grain, manned by a crew of four persons, or with a steamer adapted to the canal, and a barge in tow, the two carrying 40,000 bushels of grain, with a crew of four for their management, the two boats together constructed at one-fifth the cost of the largar lake vessel, and managed by one-fourth the number of crew required for the larger lake vessel, by a class of men commanding less rate of wages than the lake sailors, would be found to be a more economical and more profitable application of money than to run the large vessels through these ship canals. For these reasons, a ship canal of the size proposed from the Hudson to Lake Champlain, or of larger magnitude, or one from Oswego to the Hudson, of like size, would be impracticable and valueless works.

The arguments appear to establtsh the conclusion, that for smooth water navigation by river, canal or small lake, barge transportation, even with the additional transfer charges, can be transacted much more cheaply than by large lake or ocean steamers. It can hardly be expected in view of their own engineer's very condemnatory report, that the United States Congress will incur the immense liability involved in constructing ship canals, when cheaper means of transportation can be secured at one-fourth of the cost.

CHANGING BUOYS.

The Light-House Board sends out the following: Notice is hereby given that the work of changing the iron buoys in the ninth light-house district for the winter, to spar buoys, similarly painted, will begin on the dates below: Gas lighted and bell buoys, Michigan and Wisconsin, Novembr 10; Fox Island shoals and Manitou shoal, Michigan, November 15; Sturgeon Bay, Wisconsin, November 15; Green Bay and channels between Lake Michigan and Green Bay, Wisconsin and Michigan, November 16; Mackinac Straits (west of old Mackinac light station), and channels north and east of Beaver Island group, Michigan, November 20; off Sheboygan, Wisconsin, November 22; off Milwaukee and Racine, Wisconsin, November 23; off Chicago, Ill., November 25.

CUSTOM HOUSE CLEARANCES.

The prospective changes in the customs districts of the Great Lakes at the next session of Congress are matters of considerable interest throughout all states which have lake ports.

Vesselmen are dissatisfied with the present law requiring registrations of vessels and clearances officially signed, no matter under what conditions clearances are made, and there is a demand that the next Congress make some modifications. It is claimed that to do away with the coastwise reports and arrivals and clearances the government will do away with the greater portion of the expense involved in collecting the customs, get the same statistics in more reliable form and in addition cease subjecting the vessel interests to a vast amount of trouble and expense. The tendency of the Treasury Department under Secretary Gage is to decrease the expense of collecting the customs of the country.

LARGE CARGO.

Probably the largest cargo brought to London by one vessel was discharged recently in the Millwall docks. This cargo was brought by the steamer Milwaukee, one of Messrs. Elder, Dempster & Co.'s line, running between London and Montreal. The Milwaukee's cargo capacities are 11,500 tons dead weight, or 18,000 tons measurement of forty cubic feet. What this means in actual carrying may be gauged by the enumeration of her cargo, which was as follows: 514 head cattle, 132 horses, 18,412.12 bushels oats, 1,209 bales hay, 13,149 sacks flour, 51,629 pieces deal, 16,328 boards, 4,393 pieces lumber, 195 tierces lard, 200 bags starch, 640 sheep, 189,200 bushels corn, 20,025 boxes cheese, 399 cases apples, 11 cases machinery, 16,737 deal ends, 5,723 pieces birch planks, 134 radiators, 830 pails lard, 5,730 bags grape sugar.

BULKHEADS IN VESSELS.

Mr. John Morrison writes in Cassier's Magazine for the current month to the effect that as early as the beginning of the nineteenth century the Chinese divided the holds of their trading vessels intended for distant waters into a number of smaller holds or spaces. These compartments were separated by partitions or bulkheads made of 3-inch planks and caulked with a gum that was mixed with lime and threads of bamboo—a composition that readily hafdened when brought into contact with water. The number of compartments depended upon the number of owners in the vessel. This is hardly likely to commend itself to western steamship owners, for bulkheads would be rather numerous were they counted by each sixty-fourth, and if each owner insisted upon himself and his wares being carried in his own little dwelling.

In a large vessel there were sometimes as many as one hundred of these owners, each partner shipping his goods in his own berth, which he fitted up to suit himself, and either went in person or sent one of his family to take charge of his property. At just what time this division of the hull was first adopted does not appear to have been recorded. It may have been very old at the period named. The compartments, it will be seen, were made for commercial economy rather than for the safety of the vessel. Use of bulkheads for safety purposes was probably first made in the western rivers of the United States. As early as 1820, not ten years after the introduction of steam navigation on the Mississippi and Ohio rivers by Robert Fulton, the hull of the steamboat Columbus, running between New Orleans and Shippingport, Kentucky, was torn open by a snag, but the vessel was "saved from sinking by having a snag room, which compartment alone was filled with water." The Caledonia, running on the Mississippi river in 1824, also had a snag room. Prior to the year 1849, of 736 vessels lost from all causes on western American rivers, 419 were lost from snags and other obstructions in the rivers. No doubt the danger in navigating these rivers is what brought the snag room or chamber into use, though if they were as rudely and cheaply constructed as many of these vessels themselves were at this early period, they could hardly be relied on in many cases, and this may account for the fact that they did not come into more general use.

THE IRON TRADE.

Iron is a barometer of business. A table published in the Iron Age shows that in October 171 blast furnaces were operating in the United States with a weekly producing capacity of over 200,000 tons. This was an increase of ten furnaces and 15,000 tons over the month of September The increase in the number of furnaces and quantity of output has been continual ever since a year ago, when the production of pig iron went down to 113,000 tons, its lowest mark in many years. The present mark is the highest point touched in two years. On November 1, 1895, pig iron production reached its highest record, 217,300 tons a week.

There is a strong probability that that mark will be surpassed before the end of the present month, it being already approximated. This increase in pig iron production is the natural result of enlarged demands from growing expansion in business. The story which the iron output tells merely supplement and corroborates that which the bank clearances, the railroad earnings, the postal and internal revenue receipts and the reports of Dun and Bradstreet are relating—that the volume of business is now greater than it has been for a year past.

A LAKE MARRIAGE.

On the steamer City of Detroit, in midlake at midnight, Friday, John Sargent, chief engineer of the steamer City of Cleveland, was married to Mrs. Mary E. Brady, of Detroit. When the steamer was sighted off the Cleveland harbor all the tugs and boats at anchor whistled a welcome to the newly married couple. A wedding breakfast was served on the boat, and all were invited. Mr. Sargent is an excellent engineer, a man of good disposition, old enough to steer a craft straight and his consort is one of the noblest works of the Creator.

SUDDEN CALL HENCE.

Capt. Michael Riley, of the steamer Susquehanna, which was lying at Port Huron, wind-bound on Tuesday, was found dead on board his steamer. Capt. Riley was sitting in a chair, when he was called for supper, and a steward discovered life to be extinct. Undertakers were called in and took charge of the remains, and sent them to his home in Erie. Capt. Riley was 55 years old and had sailed the lakes for a score of years.

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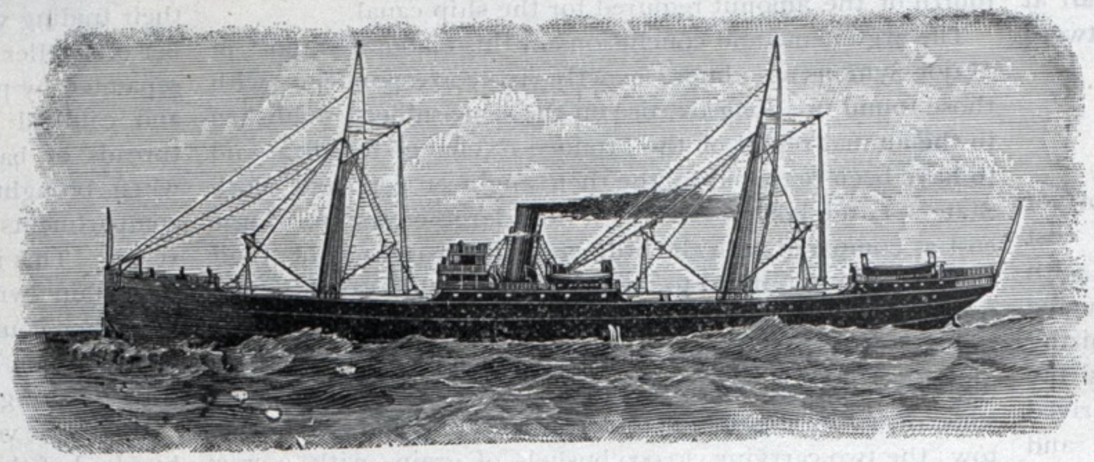

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ANNUL OLD LAWS.

The attention of officials of the Bureau of Navigation is being drawn of late to the character of a certain class of complaints resulting in fines which are made by revenue officers against vessels that have transgressed minor regulations for the government of navigation. In a large number of cases it appears that the inspectors seemed inspired chiefly by desire to make a record by reporting every offense that can be evolved from the closest construction of the voluminous navigation laws. To such an extent is this carried that a number of cases have been reported to the department where fines were levied although the statute was strictly complied with by the parties fined within a short period of grace granted by the revenue officials. A few days ago there was reported a case of a vessel which was boarded while her master was on shore, and where it was found that the captain's cabin, in which the papers were properly kept, was locked in order to render it a safe place in which to keep a considerable sum of money. The captain immediately hired a tug, reported the facts to the inspector who had boarded his vessel, and, as he thought, received an acknowledgment that everything was all right and that no fine would be levied. Subsequently he was fined.

A similar case has also reached the department. The schooner St. Lawrence, of Port Huron, was under the west breakwater at Cleveland, on the evening of September 15. The master of the schooner went on shore, leaving the cook as ship-keeper, with instructions to hang out the anchor light at the proper time. At about 6:30, before it was dark, the schooner was hailed by a revenue cutter and told to get out the anchor light within five minutes. This was promptly done, and the captain, who returned at 7 o'clock, supposed he had heard the last of the matter, and was greatly surprised to learn that he had been fined $200. Upon presenting his case to the department General Spaulding reduced the fine to $10, which he considers ample for the alleged violation. It appears in this case that the commander of the revenue cutter expressly stated that the schooner would be allowed five minutes' grace in which to get out the light, and naturally the captain was unprepared for the subsequent proceedings against him.

Commissioner of Navigation Chamberlain agrees fully with the vesselmen who complain that there is more law on the statute books relating to navigation than any sea captain could ever learn, and throughout his administration has earnestly sought to have the laws and regulations condensed, modernized, and codified. At present the navigation laws make a leather-bound volume about twice the size of Webster's unabridged, and this fact is at the bottom of the present anomalous state of affairs in which one set of officials is kept busy assessing fines, while the other set is occupied in ordering their remission.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo	1,639,000	2,406,000	685,000	209,000	1,095,000
Chicago	3,377,000	20,659,000	2,317,000	799,000	408,000
Detroit	237,000	82,000	43,000	58,000	13,000
Duluth and Superior	3,010,000	678,000	302,000	731,000	853,000
Milwaukee	225,000	327,000	46,000	55,000	132,000
Montreal	454,000	49,000	276,000	57,000	26,000
Oswego	34,000	100,000	5,000	.....	.....
Toledo	278,000	469,000	407,000	56,000	.....
Toronto	51,000	.....	4,000	.....	13,000
On Canal	440,000	292,000	465,000	92,000	214,000
On Lakes	1,628,000	2,679,000	2,516,000	156,000	624,000
On Mississippi	.....	.....	.....	.....	.....
Grand Total	11,373,000	27,759,000	7,046,000	2,213,000	3,378,000

The wandering whistling buoy, which has been drifting across the Atlantic ocean for over a year, has again been sighted. The master of the steamship Prins, at New York, from Trinidad, says he passed it in latitude 24.24, longitude 74.13. Since the buoy broke away from its mooring at Martha's Vineyard, in June a year ago, the Hydrographic Office figures that it has wandered nearly 5,000 miles. There is no reward for its return.

KNAPP'S ROLLER BOAT.

For the second time Knapp's evolutionary craft took a whirl out on the waters of Toronto bay, beating its own record for speed, and now holding the world's record for its class. It is true no time was taken, but then nobody is likely to dispute the claim. Since the first trial trip was made just double the number of flanges and paddles have beeu put on the boat, and two round white marks painted on the smokestacks to distinguish the port from the starboard side, end, or whatever they may be called. It should be explained here that it is exceedingly difficult to utilize the ordinary nautical terms in referring to Knapp's tubular craft, and the inventor with his new boat should supply a new set of marine phrases.

There are now 16 flanges on the boat, 20 feet long by 9 inches deep, and these, Mr. Knapp thought, should be sufficient to give the necessary momentum to the boat.

In reporting this second trial trip the Toronto Globe says: The roller boat, enveloped in smoke, and steam, and fog, for it was very misty on the bay, rolled slowly about the harbor. One of the rudders was put in operation. The crew were able to steer the boat in any direction they pleased. While the boat made rather better time than on its previous trip, it can hardly be said yet to be working satisfactorily. The engines at the present time foam, which prevents them being driven, and then water getting inside wets the wheels and rails on which the machinery runs. This, of course, prevents the whole from getting a purchase on the rails and lessens the evolutions of the boat. Making only four revolutions to the minute, two less than at the previous trial, the boat nevertheless went through the water at a more rapid rate, and this Mr. Knapp attributes to the increase in the number of flanges. He also believes that the present flanges are long enough, and will not extend them at present. What will be done at once, however, is to construct some sort of a covering for the machinery inside the boat so that the water will not fall on it.

"What are you going to do with your boat now you have got it?" the Globe reporter asked Mr. Knapp.

"Well, I would have gone to England in her if she had

been built my way," the inventor replied. "I am more than ever satisfied that my idea of having the engine in the center of the boat was the right one. However, if I can get the present boat to go ten miles an hour I will be satisfied. I may, perhaps, be able to dispose of this boat."

"Are you going to build another one?"

"Yes, I propose to build another boat at least 250 feet long and 50 feet in diameter. While it will be so much larger, it will not be any heavier than this boat, as lighter steel will be used. In that boat I will have the machinery hung in the center. I will take the new boat down to the Atlantic either by running it through the rapids or placing it on barges and getting it down by the canals."

"With rudders at each end of the boat, are you not going to have some difficulty in steering?"

"No, not at all. The steersmen at the ends will have compasses, and, although they are out of sight of each other, they will have to steer absolutely and accurately by their compasses, each steersman keeping the boat on the same course."

"Yes, but when a boat is entering port and rapid steering is necessary, what will you do, for the steersman at one end of the boat cannot see what is going on at the other end?"

"But we do not steer into port, you see. We get towed in. All the big Atlantic liners have to be towed to their docks; they do not attempt to steer in. Then we will only run from land to land, to our own ports."

"Do you mean that you will choose just where you are going to have ports?"

"Certainly. If my boats are a success we will make our ports just where we please. Why, the railroads and business would simply have to come to any place we might choose. If we cut down the Atlantic record by only one day they would have to come to us. I don't suppose we would ever run into a harbor like New York, for instance."

It is evident that Mr. Knapp means every word he says. He has the most implicit confidence in his new boat. Active, energetic and enthusiaatic, there is no such word as fail in Mr. Knapp's vocabulary.

NOTES.

The British government spends annually upon its military forces in one form or another no less than $180,000,000, while the navy last year cost only $120,000,000. A correspondent of the New York Sun, who gives these statistics, says: "The mere statement of these figures, coupled with the acknowledged weakness and inefficiency of the British military system, is prima facie proof of the gross mismanagement of the British War Department which amounts to one of the greatest national scandals of the age. The hidebound conservatism intrenched behind mountains of red tape seems to be entirely beyond the reach of criticism or reform."

The Standard Automatic Releasing Hook Co., of New York, will furnish Raymond's patent davit block hooks for the boats of H. M. Flagler's new twin-screw steamer Miami, which was launched on Saturday from the yard of Wm. Cramp & Sons. These hooks were selected after they had been carefully examined by E. Platt Stratton, the chief engineer-surveyor to the Record of American and Foreign Shipping, and he was convinced of the merits of the automatic detaching invention. The appliance has been perfected by Capt. Raymond, manager of the company, and is now coming into general use for all first-class tonnage.

Our navy has now five torpedo boats, and with the new ones now building the number will soon be 21. Last year England had 256, France had 244, Russia, 185; Germany, 155, and Spain, 46. England had 28 torpedo vessels under construction, each of which is required to attain a speed of 30 knots. We have gained by delay in entering this field, as Benjamin Micou shows in the North American Review, on account of the great expense of experimentation; but there is nothing to be gained by further delay in the development of this arm of the service. Armor and guns keep up a close race for supremacy, but because of their destructive character nothing is more demoralizing to an enemy than torpedos. Mr. Micou shows that, by taking recent bids as a basis of estimate, some 25 30-knot torpedo boats or 20 or more torpedo boat destroyers may be built, including their armor and armorment, for the cost of a single complete battleship.

Receiver's Sale of Tugs.

The entire fleet of tugs of the Vessel Owner's Towing Company to be sold by order of the Circuit Court of Cook County, Illinois. Bids for all or any of these tugs will be received by the receiver until 9 a. m., November 22, 1897. All bids to be accompanied by a deposit of 10 per cent. of the amount of bid. The tugs can be seen by applying to the receiver.

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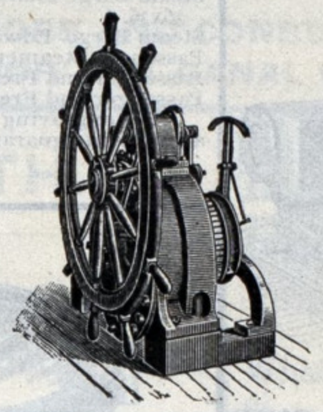

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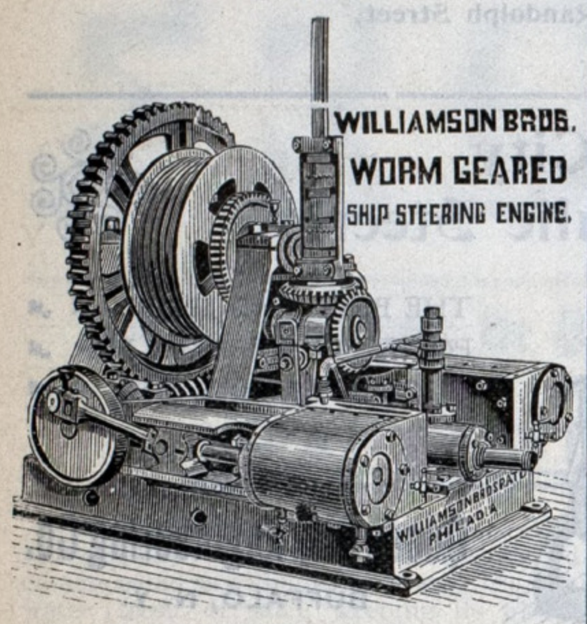

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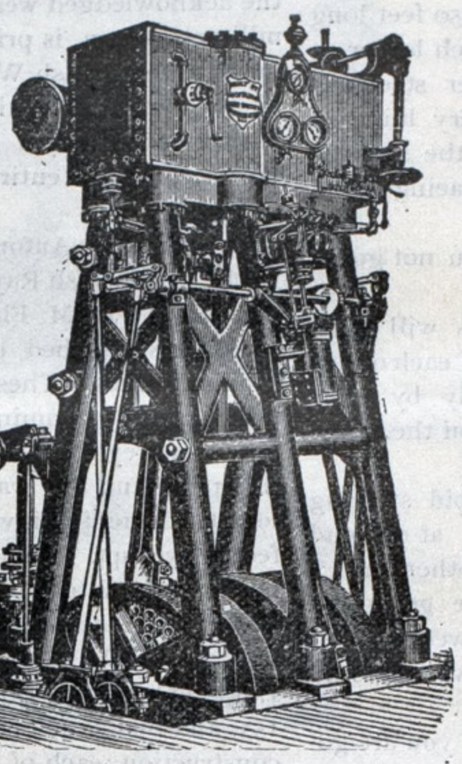

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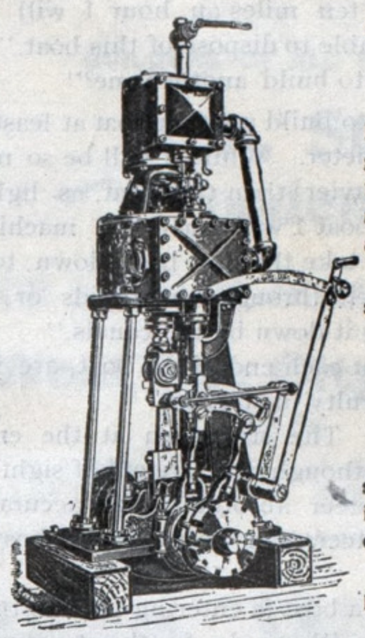

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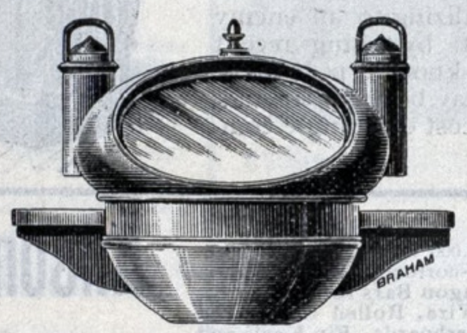

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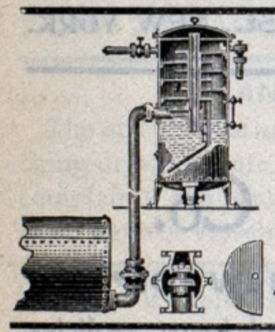

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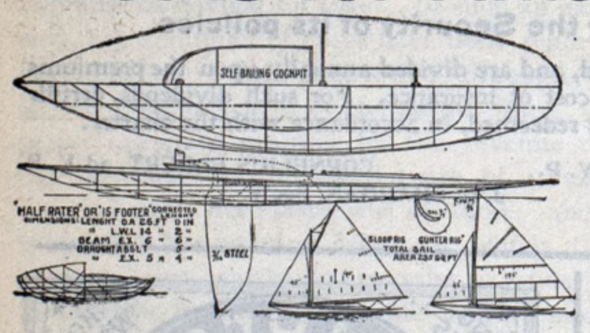

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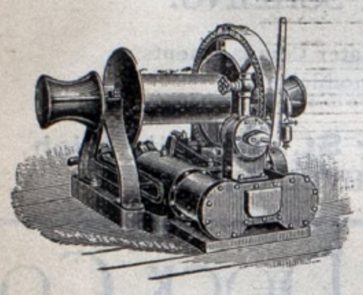

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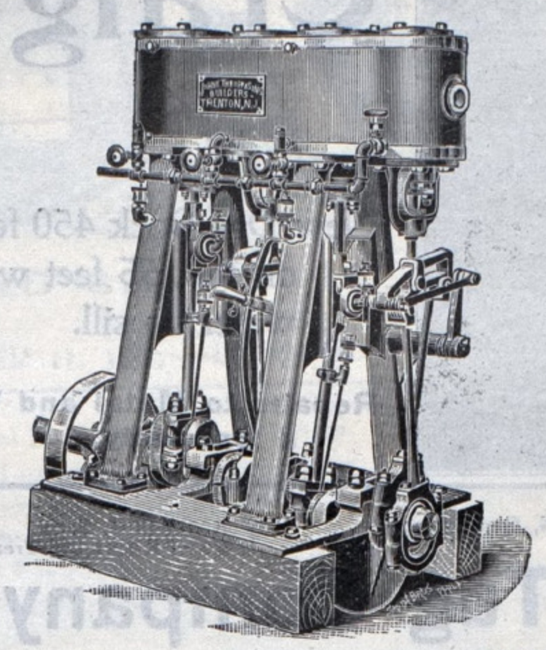

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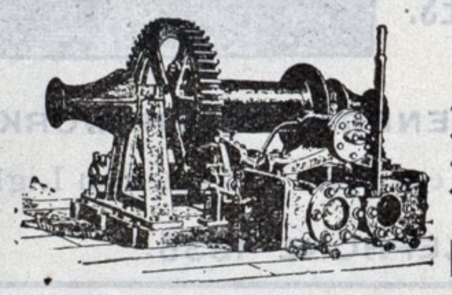

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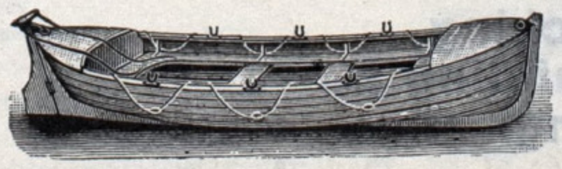

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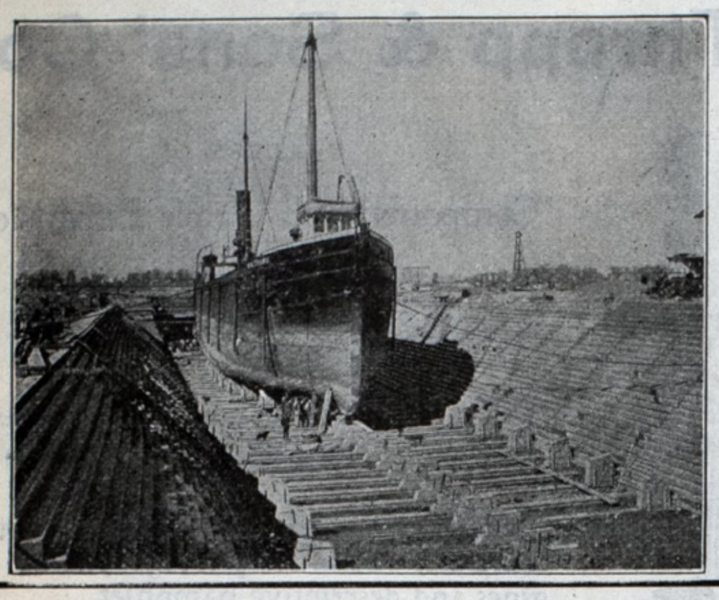

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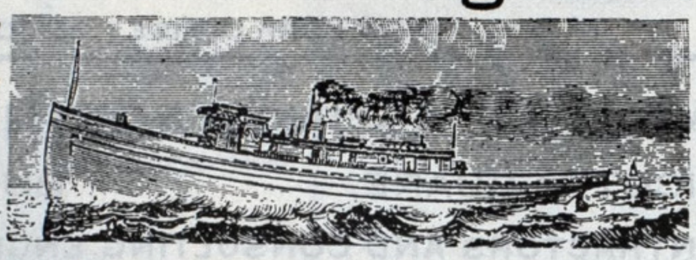

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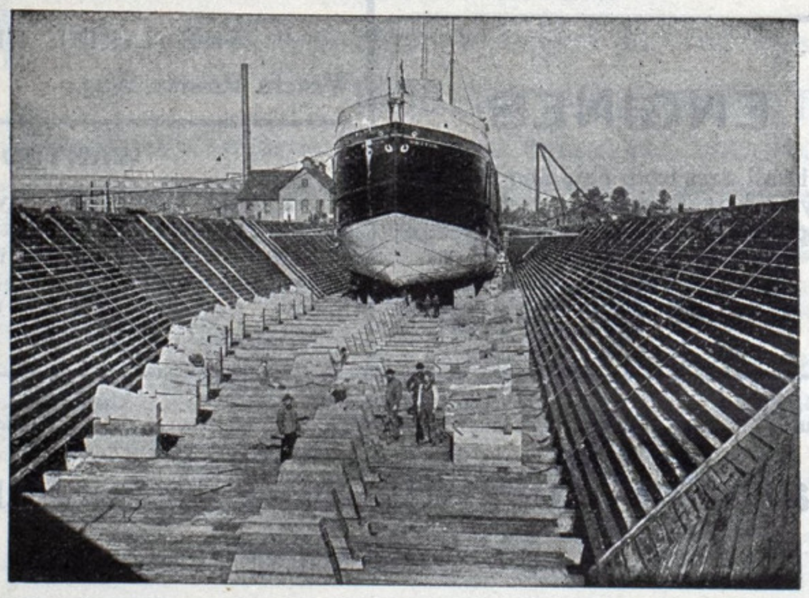

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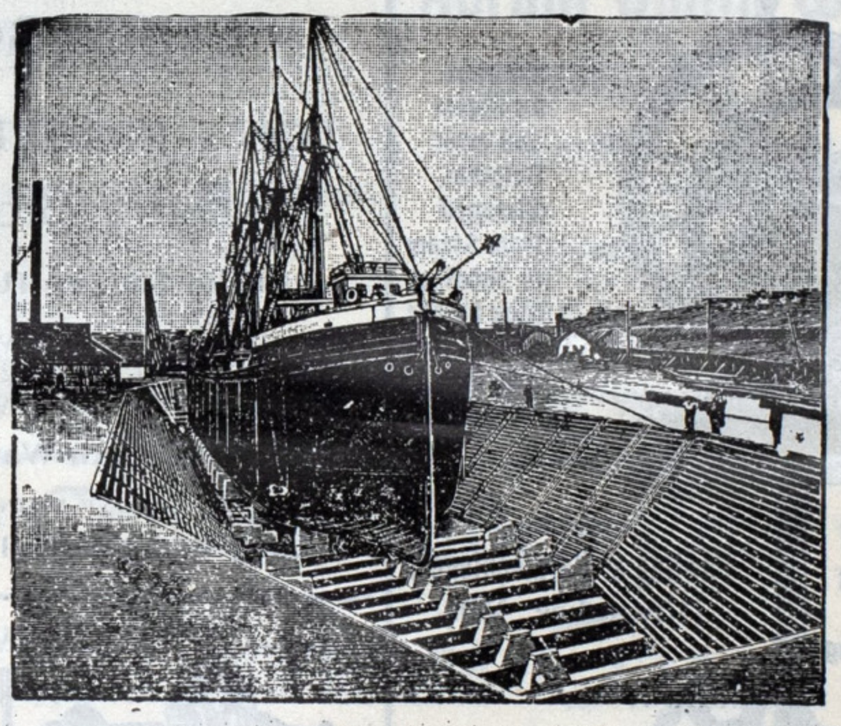

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